

### **REMARKS**

Claims 1-12 are pending in this application.

In response to the objection to the Abstract, Applicants are submitting herewith a new Abstract of the Disclosure. Accordingly, Applicants request that the objection to the Abstract be withdrawn.

Applicants respectfully request reconsideration of the rejection of claims 1 and 6 under 35 U.S.C. § 102(b) as being anticipated by *Dickinson et al.* ("*Dickinson*") (U.S. Patent No. 5,332,651). As will be explained below, the *Dickinson* reference does not disclose each and every feature specified in independent claim 1.

The *Dickinson* reference discloses a photo-curable composition for the preparation of stencils used in screen printing, and thereby fails to disclose the patterning of a photonic crystal structure having a desired array as in the claimed subject matter. The composition disclosed by *Dickinson* includes grafted polyvinyl alcohol as a photopolymerizable monomer, and this composition is applied to a mesh made of stainless steel or polymer. According to *Dickinson*, the stencil area means the part that is being covered with the material that is impervious to the ink being used for the printing. The stencil can be prepared directly by a process including coating a photosensitive emulsion onto a mesh, drying the coating to form a continuous even film, imaging the coating photographically, and developing an image followed by removing the unexposed areas. This stencil printing technique, which is usually used for applying solders or adhesives onto a printed circuit board (PCB), has nothing to do with the preparation of patterned photonic crystals for optical usage.

The method of preparing patterned photonic crystals defined in claim 1 includes the operations of a) filling a monomer solution into the interstices of colloidal crystals for photopolymerization inside them, and b) performing a selective photopolymerization process

in the interstices of colloidal crystals by use of a mask. The *Dickinson* reference does not disclose either operation a) or operation b). As discussed above, the *Dickinson* reference shows the use of a mesh made of polymer or stainless steel onto which a photo-curable composition is applied. No photopolymerization process is carried out inside the interstices of colloidal crystals in the *Dickinson* reference. Thus, the final product produced by *Dickinson* is the stencil, which may be used for screen printing. The method shown by *Dickinson* is not capable of providing patterned photonic crystals.

For at least the foregoing reasons, the *Dickinson* reference does not disclose each and every feature specified in independent claim 1. Accordingly, claim 1 is patentable under 35 U.S.C. § 102(b) over *Dickinson*. Claim 6, which depends from claim 1, is likewise patentable under 35 U.S.C. § 102(b) over *Dickinson* for at least the same reasons set forth above regarding claim 1.

Applicants respectfully request reconsideration of the rejection of claims 1-6 under 35 U.S.C. § 102(e) as being anticipated by *Jiang et al.* ("*Jiang*") (U.S. Patent Application Publication No. US 2002/0143073 A1). As will be explained below, the *Jiang* reference does not disclose each and every feature specified in independent claim 1.

The *Jiang* reference discloses polymers having macropores. According to *Jiang*, monodisperse colloids are used as a template for the polymers, and are eventually removed to form polymers having macropores. As such, the method shown by *Jiang* can produce only the exact inverse image of the template. The claimed subject matter has nothing to do with the preparation of polymers having macropores.

The method of preparing patterned photonic crystals defined in claim 1 includes operations a) and b), which are specified above in connection with the rejection based on the *Dickinson* reference. The *Jiang* reference does not disclose either operation a) or operation

b). The polymers produced by *Jiang* have a totally different structure than the crystals of the claimed subject matter. In particular, the *Jiang* method produces only polymers having macropores, which are formed by removing the template. The *Jiang* method is not capable of providing patterned photonic crystals.

For at least the foregoing reasons, the *Jiang* reference does not disclose each and every feature specified in independent claim 1. Accordingly, claim 1 is patentable under 35 U.S.C. § 102(e) over *Jiang*. Claims 2-6, each of which ultimately depends from claim 1, are likewise patentable under 35 U.S.C. § 102(e) over *Jiang* for at least the same reasons set forth above regarding claim 1.

Applicants respectfully request reconsideration of the rejection of claims 7-12 under 35 U.S.C. § 103(a) as being unpatentable over *Jiang* in view of *Borodovsky* (U.S. Patent No. 5,532,090). Independent claim 7 defines a method of preparing patterned photonic crystals that is similar to the method defined in claim 1, but further includes the use of a second monomer solution and an additional mask. The *Borodovsky* reference does not cure the above-discussed deficiencies of the *Jiang* reference relative to the claimed subject matter. Thus, Applicants submit that the combination of *Jiang* and *Borodovsky* would not have suggested to one having ordinary skill in the art the claimed subject matter. Accordingly, Applicants respectfully submit that claims 7-12 are patentable under 35 U.S.C. § 103(a) over the combination of *Jiang* in view of *Borodovsky*.

In view of the foregoing, Applicants respectfully request reconsideration and reexamination of claims 1-12, and submit that these claims are in condition for allowance. Accordingly, a notice of allowance is respectfully requested. In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 749-6902. If any additional fees are due in connection with the filing of

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this paper, then the Commissioner is authorized to charge such fees to Deposit Account No.  
50-0805 (Order No. ASIAP118).

Respectfully submitted,  
MARTINE PENILLA & GENCARELLA, L.L.P.

A handwritten signature in black ink, appearing to read 'P. B. Martine', with a long horizontal flourish extending to the right.

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